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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,950	07/03/2003	Alexis Tzannes	5550-31	5413

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EXAMINER
ROSARIO, DENNIS

ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
12/15/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jvick@sheridanross.com

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 October 2008</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-91</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-91</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>03 July 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/2/08

has been entered. Claims 1-91 are pending.

Response to Arguments

2.   Applicant's arguments, see remarks, page 10, 2nd paragraph, filed 10/2/08, with

respect to 102(b) and (e) have been fully considered and are persuasive. The rejection

of claims 1-91 has been withdrawn.

        Applicants state why the 101 rejection has been maintained. Upon further review

of paragraph [080] of the specification, the 101 rejection of corresponding claims 73-91

has been withdrawn. However, a new 101 rejection has arisen.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

4.   Claims 19-36, 55-72 are rejected under 35 U.S.C. 101 as not falling within one of

the four statutory categories of invention.   Supreme Court precedent[1] and recent

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[1] *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v.
Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

Federal Circuit decisions[2] indicate that a statutory "process" under 35 U.S.C. 101 must

(1) be tied to another statutory category (such as a particular apparatus), or (2)

transform underlying subject matter (such as an article or material) to a different state or

thing. While the instant claim(s) recite a series of steps or acts to be performed, the

claim(s) neither transform underlying subject matter nor positively tie to another

statutory category that accomplishes the claimed method steps, and therefore do not

qualify as a statutory process.   For example, claim 19 is a method claim that has no

associated structure such as hardware to perform the steps of claim 19. Claim 55

claims a protocol that has been interpreted as a method that has no structure, too.

5.   Claim 73-91 is rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter. Claim 73-91 is drawn to functional descriptive

material NOT claimed as residing on a computer readable medium.   MPEP

2106.IV.B.1(a) (Functional Descriptive Material) states:

> "Data structures not claimed as embodied in a computer-readable medium are
> descriptive material per se and are not statutory because they are not capable of
> causing functional change in the computer."

> "Such claimed data structures do not define any structural or functional
> interrelationships between the data structure and other claimed aspects of the invention
> which permit the data structure's functionality to be realized."

Claim 73-91, while defining an information storage media or storage media does

not define a "computer-readable medium" and is thus non-statutory for that reasons. An

information storage media or storage media can range from paper on which the

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[2] *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

program is written, to a program simply contemplated and memorized by a person. The

examiner suggests amending the claim to embody the program on "computer-readable

medium" in order to make the claim statutory.

> "In contrast, a claimed computer-readable medium encoded with the data
> structure defines structural and functional interrelationships between the data structure
> and the computer software and hardware components which permit the data structure's
> functionality to be realized, and is thus statutory." - MPEP 2106.IV.B.1(a)

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 1-5,8,12-14,17-24,26,30-32,35-41,44,48-50,53-59,62,66-68,71-77,80,84-

86 and 89-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lubin et

al. (US Patent 6,075,884) in view of Hou (US Patent 5,859,788).

        Regarding claim 19, Lubin teaches an image compression method

comprising:

a)   receiving a first image (fig. 7: ORIGINAL VIDEO), that has been
decomposed into N subbands using a 2-dimensional wavelet transform (not disclosed in
Lubin), in a sequence of images and

b)   compressing (fig. 7:ENCODED BITSTREAM) the image at least based on
one or more parameters (fig. 7:ENCODER PARAMETERS); and

c)   iteratively adapting ("iterative…adaptation" in col. 9, lines 1-3 via figures 7
and 8) the one or more parameters ("parameters" in col. 9, lines 1-3) used on the first
image (fig. 7:ORIGINAL VIDEO) for compression (via figs. 4-6) of a next image (fig.
4:ORIGINAL VIDEO), wherein the one or more parameters include at least one
truncation parameter (given that the parameters are used to "reduce…error" in col. 9,
lines 1-3).

Lubin does not teach the wavelet limitation, but teaches using "transform coeffi-
cients" in col. 7, lines 4-7 and in col. 9, lines 39-43 with respect to fig. 9.

Hou teaches that "transformed data is referred to as coefficients" in col. 2, lines
24-28 where the transformed data is from a modulated lapped transform in the title of
Hou and the limitation of decomposed (implied) into N subbands (or "five band subset"
in col. 23, lines 29-35 as shown in fig. 13 that shows five blocks of 4X4 smaller block
dimensions) using a 2-dimensional wavelet transform (or "MLT…similar to wavelet
transforms" in col. 23, lines 29-35 where MLT is 2D as shown in fig. 13:2-D).

It would have been obvious at the time the invention was made to one of ordinary
skill in the art to modify Lubin's transform coefficients with Hou's transform coefficients,

because Hou teaching is "superior to DCT…[and]…ordinary subband filters" in col. 23,

lines 29-35.

Claims 20 and 21 are rejected the same as claim 19b). Thus, argument similar to

that presented above for claim 19b) is equally applicable to claims 20 and 21.

Regarding claim 22, Lubin discloses the method of claim 21, wherein the metric

is at least based on one of image file size and image quality (since figure 4 is called

QME which stands for quality-metric-based encoding.).

Regarding claim 23, Lubin discloses the method of claim 22, wherein the metric

governing image quality is based on one or more of:

a)   peak signal to noise ratio,

b)   mean squared error,

c)   human visual system models and

d)   operator inspection (or "human viewer" in col. 7, line 34).

A rejection of claim 24 is moot based on the "one of" limitation in claim 22.

Regarding claim 26 Lubin discloses the method of claim 21, wherein the metric is

based on a difference (or "differences" in col. 5, line 20) between a target image quality

("predicted ratings" in col. 5, line 20) and an achieved image quality ("ratings observed"

in col. 5, line 20 where said ratings includes "quality levels" in col. 5, line 24) .

Regarding claim 30, Lubin discloses the method of claim 19, wherein the first

image and the next image are one or more of:

a)   a sequence of images (or ORIGINAL VIDEO as shown in fig. 4),

b)   time-series data, and

    c)   3-dimensional data sets.

Regarding claim 31, Lubin discloses the method of claim 19, further comprising:

    a)   iteratively ("iterations" in col. 7, line 44) controlling the one or more

        parameters.

Claim 32 is rejected the same as claim 31. Thus, argument similar to that presented above for claim 31 is equally applicable to claim 32.

Regarding claim 35, Lubin discloses the method of claim 19, further comprising:

    a)   selecting a quantization ("selection of a quantization" in col. 9, line 52).

Claims 1-5,8,12-14,17,18 are rejected the same as claims 19-23,26,30-32 and 35,19. Thus, argument similar to that presented above for claims 19-23,26,30-32 and 35,19 of a method is equally applicable to claims 1-5,8,12-14,17,18 of a system.

Claims 36-41,44,48-50,53,54 are rejected the same as claims 19,19-23,26,30-32 and 35,19. Thus, argument similar to that presented above for claims 19,19-23,26,30-32 and 35,19 of a system is equally applicable to claims 36-41,44,48-50,53,54 of a system.

Claims 55-59,62,66-68,71-72 are rejected the same as claims 19-23,26,30-32 and 35,19. Thus, argument similar to that presented above for claims 19-23,26,30-32 and 35,19 of a system is equally applicable to claims 55-59,62,66-68,71-72 of a protocol.

Claims 73-77,80,84-86,89,90,91 are rejected the same as claims 19-23,26,30-32 and 35,19,19. Thus, argument similar to that presented above for claims 19-23,26,30-32 and 35,19,19 of a system is equally applicable to claims 73-77,80,84-86,89,90,91 of a media.

8.   Claims 1,7,9,-11,15,16,18,19,21,25,27-29,33,34,36,37,43,45-47, 51, 52, 54, 55,

57,61,63-65,69,70,72,73,75,79,81-83,87,88,90 and 91 are rejected under 35 U.S.C.

103(a) as being unpatentable over Mukherjee (US Patent 7,003,167 B2) in view of Hou

(US Patent 5,859,788).

Regarding claim 19, Mukherjee teaches an image compression method

comprising:

       a)   receiving a first image (fig. 1:98), that has been decomposed into N

            subbands using a 2-dimensional wavelet transform, in a sequence of

            images ("series of blocks" in col. 4, lines 25-27) and

       b)   compressing the image (fig. 1:11) at least based on one or more

            parameters (fig. 1:13:RAW or BTC-VQ or n-COLOR); and

       c)   iteratively adapting (via "adaptive image compression" in col. 3, line 50)

            the one or more parameters (fig. 1:13:RAW or BTC-VQ or n-COLOR)

            used on the first image (fig. 1:98) for compression of a next image (given

            that the adaptive image compression operates using said RAW or BTC-

            VQ or n-COLOR on a "block by block" in col. 3, lines 50-53 basis, the

            adaptive compression finishes processing of a current block for

            processing another block that is waiting to be processed), wherein the one

            or more parameters (said RAW or BTC-VQ or n-COLOR) include at least

            one truncation parameter (said RAW includes " 'truncated raw' " in col. 3,

            lines 25-29).

Mukherjee teaches away wavelets, because the wavelets have a penalty in compression environments.

Hou has recognized in col. 3, lines 43-65 the same problem of wavelets in the environment of compression of Mukherjee and provides a solution: "Modulated Lapped Transform" in col. 3, lines 53,54 and the limitation of decomposed into N subbands using a 2-dimensional wavelet transform as discussed in the rejection of claim 19 in Lubin.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Mukherjee's teaching of wavelets with Hou's wavelets for the same reason as in the rejection of claim 19, above.

Regarding claim 21, Mukherjee discloses the method of claim 19, wherein the compression parameter module adapts the one or more parameters based on a metric (or "in-progress measure" in col. 2, line 56).

Regarding claim 25, Mukherjee discloses the method of claim 21, wherein the metric is based on a difference between a target image file size and an achieved image file size ("difference between the determined com-pressed block size and the target block size" in col. 5, lines 64,65.

Regarding claim 27, Mukherjee discloses the method of claim 19, wherein the one or more parameters includes one or more:

a)   quantization parameters (or "BTC-VQ" in col. 4, line 40 that is a function of truncation and quantization).

Claims 28,29,33 and 34 are rejected the same as claim 27b). Thus, argument similar to that presented above for claim 27b) is equally applicable to claims 28,29,33 and 34.

Claim 36 is rejected the same as claim 19. Thus, argument similar to that presented above for claim 19 is equally applicable to claim 36.

Claims 1,7,9-11,15,16,18 are rejected the same as claims 19,25,27-29,33,34,19. Thus, argument similar to that presented above for claims 19,25,27-29,33,34,19 of a system is equally applicable to claims 1,7,9-11,15,16,18 of a method.

Claims 37,39,43,45-47,51,52,54 are rejected the same as claims 19,25,27-29,33,34,19. Thus, argument similar to that presented above for claims 19,25,27-29,33,34,19 of a system is equally applicable to claims 37,39,43,45-47,51,52,54 of a system.

Claims 55,57,61,63-65,69,70,72 are rejected the same as claims 19,25,27-29,33,34,19. Thus, argument similar to that presented above for claims 19,25,27-29,33,34,19 of a system is equally applicable to claims 55,57,61,63-65,69,70,72 of a protocol.

Claims 73,75,79,81-83,87,88,90,91 are rejected the same as claims 19,25,27-29,33,34,19. Thus, argument similar to that presented above for claims 19,25,27-29,33,34,19 of a system is equally applicable to claims 73,75,79,81-83,87,88,90,91 of a media.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is (571) 272-7397. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Rosario/   /Matthew C Bella/
Examiner, Art Unit 2624   Supervisory Patent Examiner, Art
                                                       Unit 2624